

CLAIMS

What is claimed is:

1. In a graft for repair of living animal tissue, said graft comprising a plurality of interlaced first filamentary members, a second filamentary member having a relatively higher tensile strength than said first filamentary members, said second filamentary member being interlaced with said first filamentary members and defining a reinforced attachment region on said graft for attachment of said graft to said living animal tissue.

2. A graft according to Claim 1, wherein said second filamentary member comprises a material of a composition characterized by a higher tensile strength relatively to material comprising said first filamentary members.

3. A graft according to Claim 2, wherein said material comprising said second filamentary member is selected from the group consisting of nitinol, stainless steel and titanium.

4. A graft according to Claim 3, wherein said material comprising said first filamentary members is selected from the group consisting of polyester, polypropylene and nylon.

5. A graft according to Claim 1, wherein said second filamentary member comprises a plurality of plied filaments.

6. A graft according to Claim 5, wherein each filament of said plurality of plied filaments has substantially the same denier and comprises substantially the same material as said first filamentary members comprising said graft.

7. A graft according to Claim 1, wherein said second filamentary member has a relatively greater denier than said first filamentary members.

8. A graft according to Claim 1, wherein said graft comprises an elongated tube.

9. A graft according to Claim 8, wherein said second filamentary member is positioned circumferentially around said tube adjacent to one end thereof.

10. A graft according to Claim 9, further comprising a third filamentary member positioned circumferentially around said tube proximate to said one end and in spaced relation to said second filamentary member, said second and third filamentary members defining a space between one another comprising said attachment region, said attachment region being reinforced by said second and third filamentary members.

11. A graft according to Claim 10, wherein said second and third filamentary members have a color different from said first filamentary members comprising said graft, said second and third filamentary members, thereby visually identifying said attachment region therebetween.

12. A graft according to Claim 11, wherein said first, second and third filamentary members are interlaced by weaving.

13. A graft according to Claim 10, further comprising a stent extending circumferentially around said tube and attached thereto at said one end thereby supporting said tube radially outwardly, said stent engaging said second and third filamentary members.

14. A graft according to Claim 13, wherein said second and third filamentary members have a relatively greater denier than said first filamentary members, said stent being supported away from said first filamentary members by said second and third filamentary members, said second third filamentary members providing a sacrificial surface protecting said first filamentary members from abrasion by said stent.

15. A graft according to Claim 14, further comprising a plurality of longitudinal filamentary members oriented substantially lengthwise along said tube and positioned circumferentially there around, said longitudinal filamentary members being interlaced with and having a relatively greater denier than said first filamentary members and intersecting said second and third filamentary members at said one end thereby further supporting said stent away from said first filamentary members.

16. In a graft for repair of living animal tissue, said graft comprising a plurality of interlaced first filamentary members, a plurality of second filamentary members interlaced with said first

filamentary members and positioned in an attachment region on said graft attachable to said living animal tissue, said second filamentary members for inhibiting leaks upon attachment of said graft to said living animal tissue.

17. A graft according to Claim 16, wherein said graft comprises an elongated tube, said second filamentary members being positioned circumferentially around said tube at one end thereof.

18. A graft according to Claim 17, wherein said first and second filamentary members are interlaced by weaving, said second filamentary members comprising textured filamentary members having increased bulk adapted to overlie and block openings in said attachment region resulting from piercing of said attachment region during attachment of said graft to said living animal tissue.

19. A graft according to Claim 17, wherein said first and second filamentary members are interlaced by weaving, said second filamentary members comprising a heat-shrinkable material which shrinks upon heating to cinch said one end of said tube and close openings in said attachment region resulting from piercing of said attachment region during attachment of said graft to said living animal tissue.

20. A graft according to Claim 19, wherein said heat-shrinkable material comprises a thermoplastic.

21. A graft according to Claim 17, wherein said first and second filamentary members are interlaced by

weaving, said second filamentary members comprising an elastic material which deflects elastically from a nominal position to form a temporary opening when pierced during attachment of said graft to said living animal tissue, said second filamentary members returning substantially to said nominal position and thereby closing said opening in said attachment region resulting from said piercing of said attachment region.

22. A graft compatible with living animal tissue, said graft comprising:

an elongated tube formed of a plurality of interlaced first filamentary members, said tube being relatively impermeable and useable as a fluid conduit;

a plurality of second filamentary members having a relatively higher tensile strength than said first filamentary members, said second filamentary members being interlaced with said first filamentary members in a plurality of pairs circumferentially around said tube and a plurality of pairs lengthwise along said tube; and

a plurality of cannulation areas positioned on said tube, said cannulation areas being defined between said pairs of said filamentary members extending circumferentially around and lengthwise along said tube, each said pair of filamentary members bordering one of said cannulation areas, said cannulation areas being reinforced by said filamentary members to prevent propagation of a tear in said tube from one cannulation area to another.

23. A graft according to Claim 22, wherein said second filamentary members comprise a material having a

higher tensile strength than said first filamentary members.

24. A graft according to Claim 22, wherein said second filamentary members each comprise a plurality of plied filaments.

25. A graft according to Claim 24, wherein each of said plied filaments has substantially the same denier and comprises substantially the same material as said first filamentary members.

26. A graft according to Claim 22, wherein said second filamentary members have a relatively greater denier than said first filamentary members.

27. A graft according to Claim 26, wherein said second filamentary members comprise substantially the same material as said first filamentary members.

28. A graft according to Claim 22, further comprising a plurality of third filamentary members interlaced with said first filamentary members and positioned within said cannulation areas on said graft, said third filamentary members for inhibiting leaks in said cannulation areas.

29. A graft according to Claim 28, wherein said third filamentary members comprise textured filamentary members having increased bulk adapted to overlies and block openings in said cannulation areas resulting from piercing of said areas during cannulation.

30. A graft according to Claim 28, wherein said third filamentary members comprise an elastic material, said third filamentary members deflecting elastically from a nominal position to form a temporary opening when pierced during cannulation of said cannulation areas, said third filamentary members returning substantially to said nominal position after said cannulation and thereby closing said opening in said cannulation area resulting from said piercing.

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